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Veterinary Services

Strategy and Policy

Ruminant Health Center

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# **Review of Montana's Brucellosis Management Program, 2019**

A Review of Montana's Brucellosis Disease Management and  
Mitigation Activities across the State and within the Designated  
Surveillance Area

# **2019 Review of Montana's Brucellosis Management Program**

**Dates of the Review:** June 24-28, 2019

## **Review Team Members**

- Dr. Mark Camacho, Team lead, VMO/Epi Ruminant Health Center (RHC)
- Dr. Ryan Clarke, VMO/Epi RHC
- Dr. Dana Nelson, VMO/Epi California
- Jocelyn Haskell, AIC/AHT Utah
- Randy Wilson, AIC/AHT Oregon

## **Animal and Plant Health Inspection Service (APHIS) Employees Joining In-Person**

- Dr. Richard Austin, Veterinary Services (VS), Acting AVIC
- Dr. Janet Hughes – Veterinary Medical Officer (VMO), VS epidemiologist

## **Montana Department of Livestock (MDOL) Employees Joining In-Person**

- Dr. Marty Zaluski, State Veterinarian
- Dr. Tahnee Szymanski, Assistant State Veterinarian
- Dr. Eric Liska, Brucellosis Program Veterinarian
- Brooke Ruffier, Brucellosis Compliance Analyst/Officer
- Antonio Fuentes Sanchez – Serology Technician (Interviewed by phone)

## **Montana Department of Fish, Wildlife and Parks (MFWP) Employees Joining In-Person**

- Quentin Kujala, Wildlife Manager Section Chief
- Emily Almberg, PhD, Wildlife Biologist
- Dr. Jennifer Ramsey, Wildlife Veterinarian

## **Montana Brand Inspectors (within MDOL) Employees Joining In-Person**

- Leslie Doely, MDOL Brands Division Administrator
- Dan Bugni, MDOL Brands Division District Investigator/Market Supervisor-Beaverhead Livestock Auction
- Jon Kamps, Market Supervisor-Headwaters Livestock, Brand Inspector

## **Montana Accredited Veterinarians serving the DSA**

- Dr. Doug Young – Local Ennis, MT accredited ranch vet
- Dr. Doug Reedy – Local Twin Bridges, MT accredited ranch vet
- Dr. Bruce Sorenson- is a Market Veterinarian for Headwaters Market near Three Forks, MT

## **Locations and People Visited**

- MDOL Office, Helena, MT – Dr. Marty Zaluski and staff
- APHIS-VS Office, Helena, MT – Dr. Richard Austin (Acting) and staff
- PAYS Livestock Market - Billings, MT - Kevin Ramsey (MDOL market supervisor), Dr. Bryan Roe and Dr. Dael Householder (market vets for PAYS and BLS in Billings, MT)
- Beaverhead Livestock Auction, Dillon, MT – Dr. Ben Abbey, Dan Bugni (MDOL yard supervisor and district investigator)
- Headwaters Livestock Auction, Three Forks, MT – Dr. Bruce Sorenson, John Kamps (Livestock Brand Inspector), Ted Wall (District Investigator)
- Pioneer Meats, Big Timber, MT – Brian and Kary Engle (owners), Terry Taylor (FSIS inspector), Dr. Robert Blair (SPHV)
- Amsterdam Meats, Manhattan, MT – Don Halwagner (state meat inspector)
- Jumping Horse Ranch Ennis, MT (previously affected herd) – Jeff Klein, manager, Dr. Doug Young
- Mountain View Veterinary Service, Twin Bridges, MT – Dr. Doug Reedy

## Executive Summary

During June 24 – 28, 2019, an external review team gathered in Helena, Montana, to participate in an onsite evaluation and a review of the effectiveness of Montana's Bovine Brucellosis Management Plan including the current mitigation activities designed to prevent *Brucella abortus* from being spread to other areas of Montana, as well as neighboring States and regions.

Montana appears to have an aggressive brucellosis management program with excellent cooperation from producers. Under the supervision of the Board of Livestock (MDOL), Dr. Marty Zaluski (State veterinarian) leads a team that actively engages the cattle industry and seems to work well with USDA, Montana Fish, Wildlife and Parks (MFWP) and private veterinarians.

Compared to the other GYA states, Montana has more cattle herds in their DSA than Idaho but less than Wyoming while having about the same number of total cattle as Wyoming (~90,000 head). Montana has no elk feed grounds in their DSA.

Montana prevents brucellosis from escaping their Designated Surveillance Area (DSA) by testing cattle and bison when they change ownership and/or prior to leaving the DSA. In addition, many producers voluntarily choose to test their entire herd in the fall when a possible quarantine will not adversely affect their feeding options and production cycle. This has resulted in >90% of DSA herds having > 15% of animals tested annually.

Montana seems to have adequate legal authority and veterinary infrastructure to implement and enforce their brucellosis regulations regarding animal identification (ID), vaccination, testing, and movement controls. The Montana Veterinary Diagnostic Lab and MDOL Brand Inspection play a key role in the day-to-day function of the brucellosis program and seem to be functioning well. Livestock markets and slaughter plants appear to be operating properly in support of the program.

Montana should be commended for their aggressive approach to defining and expanding their DSA and resisting the temptation to shrink the DSA too quickly. Their strategy of testing elk at the outer edges of the DSA and expanding the boundaries as needed has prevented spread of the disease outside of the high risk area.

Producers and local accredited veterinarians in and around the DSA seem to be well educated about the brucellosis program and cooperation/compliance is currently very high. Currently, compliance with testing regulations is not calculated in real-time, but in retrospect on an annual basis due to weaknesses in data entry by brand inspections. The review team recommends that testing compliance be evaluated on a more real-time basis where testing discrepancies associated with movements might be identified and corrected more quickly. MDOL should take steps to assess compliance on a quarterly basis as soon as possible.

The reason for such excellent producer cooperation with the brucellosis program appears to be due to a mixture of pride in state livestock quality and to state/federal funds for testing and vaccination. The financial reimbursement program for veterinarians and producers who test and

vaccinate has been very successful. Montana should be commended for appropriating State funds in support of this effort.

Future program success will most likely depend on continued state/federal financial support and maintaining enough human resources to adequately support the program. Montana may also need immediate financial support from state or feds for an additional FTE to enter brand inspection and vaccination records into their database system. The loss of the RAP antigen production at NVSL will require federal support for any changes associated with the loss of the RAP antigen in the standard brucellosis testing protocol.

### Key Recommendations

1. Continue the State's financial reimbursement for testing and vaccination to veterinarians and producers. Reimbursement rates may need updating.
2. Develop a better system to monitor testing compliance associated with animal movements than the annual retrospective method. Try to achieve more real-time compliance by:
  - a. Funding electronic brand inspection forms/software for real time database downloads of work accomplished, or
  - b. Conducting compliance evaluations on a more frequent basis than annually, or
  - c. Add another FTE to enter brand inspection and vaccination data into your database.
3. APHIS and the MDOL should finalize and sign a Memorandum of Understanding (MOU) to include a brucellosis management plan (BMP) as soon as reasonably possible to come under full compliance with 9 CFR 78. APHIS has not pushed for a signature until this review has been completed.
4. USDA should prioritize MT DSA tag orders to ensure adequate numbers of tags available for program implementation.
5. Idaho and Wyoming DSA brands and/or producers should be loaded onto Archer electronic database system for hand-held devices used at markets to insure DSA cattle identification.
6. Request VS or state support for implementing the use of MIM for auction-market testing and vaccinating.
7. Reconcile FSIS and Montana State slaughter collection regulations for both state and federal inspectors to minimize confusion.
8. Continue the current level of cattle surveillance, compliance monitoring, laboratory efficiency and customer service, and producer education for the brucellosis program.
9. MFWP should continue to maintain and broaden their current excellent relationship with MDOL, and continue using USDA cooperative agreement funds to sample and capture ~150 elk per year on the outer edges of the DSA in order to evaluate the DSA borders.
10. Continue to encourage herds to "whole herd test in the fall" to motivate DSA herds to take control of their own annual surveillance testing, and also get more DSA animals tested than with just pre-movement testing.
11. Continue to collaborate with other GYA states to keep programs similar and transparent.

## Background to GYA Brucellosis Reviews

The bacterial agent responsible for Brucellosis in cattle is *Brucella abortus*, which is also an important zoonotic agent capable of causing acute and chronic morbidity in humans and other mammalian species. Due to the success of the U.S. national brucellosis eradication program, the United States has demonstrably removed *B. abortus* infection in cattle from the country except for the Greater Yellowstone area (GYA), a small geographic area around Yellowstone National Park which has now endemically-infected wildlife in this region.

Proof of disease freedom outside of the GYA is based on more than 15 consecutive years of the surveillance and epidemiology through:

- Ninety-five percent blood collection at U.S. Top 40 adult kill slaughter plants (95 percent of all U.S. cull cattle);
- Two to four Brucellosis Ring Test rounds in all U.S. dairies;
- Ninety-five percent case closure of all MCI traces;
- Mandatory annual State reporting, reviewed by national brucellosis epidemiologists;
- A national surveillance protocol that can detect one case per 100,000 U.S. cattle annually; And the last infected cattle herd outside of the GYA was detected in 2011.

The persistence of brucellosis in wild elk and bison in the GYA is the only known reservoir of *B. abortus* in the United States and the primary focus of current regulatory activity. Brucellosis regulations requires that *“any Class Free State or area with B. abortus in wildlife must develop and implement a ‘brucellosis management plan’ approved by the Administrator in order to maintain Class Free status.”* Currently, this only applies to the three GYA States: Montana, Wyoming, and Idaho. APHIS intended to sign an MOU with each of the GYA States agreeing with their respective brucellosis management plans (BMP) to implement this regulatory requirement; however, this did not occur until April 2018 for a single State (Wyoming). Nonetheless, GYA states developed and implemented their brucellosis management plans.

In 2016, the U.S. Animal Health Association adopted a resolution asking USDA to review each GYA State’s brucellosis management plan at least once every 3 years. This is the impetus for the current review.

## Review Objectives

- Review the adequacy of the State’s brucellosis rules and infrastructure to prevent the spread of brucellosis beyond the DSA.
- Assess the enforcement of brucellosis rules.
- Assess cattle surveillance, diagnostics/laboratory capability, and producer education and cooperation.
- Assess wildlife surveillance and risk mitigation activities.
- Evaluate DSA boundaries, testing, and movement restrictions for overall effectiveness.

## **Background: Brief overview of the Montana cattle industry**

The Montana cattle industry is mostly a beef industry with almost 2.5 million total cattle and calves and only 12,000 dairy cows in the State. Approximately 1.5 million total beef cows calved in 2018 in approximately 11,400 herds. The Montana cattle industry is the 7<sup>th</sup> largest in the nation with roughly 4.5% of the nation's beef cattle. By comparison, Wyoming has the 15<sup>th</sup> largest population of beef cows and Idaho ranks 20<sup>th</sup> in the nation according to 2019 National Agricultural Statistics Service data.

Approximately 88,000 cattle in approximately 370 herds (including 113 seasonal producers) reside within the Montana DSA at some time during a given year. DSA cattle amount to about 3.3 percent of the State's beef cattle and roughly the same percent of the State's cattle herds.

## **Background: History of Brucellosis in Montana**

Since 2010, Montana has found nine brucellosis-affected herds (three bison and six cattle). This is an incidence rate of about one newly-affected herd per year over the period. Based on epidemiology, all of the herds were presumably infected from exposure to infected wild elk. The most recent herd detected in 2017 was located in Madison County and had been previously infected in 2013. The herd was tested for annual DSA surveillance testing by owner, and only one reactor (an 18 mo. pregnant female) was found in the whole herd test. The herd was released from quarantine on April 10, 2018, with an assurance test performed in the fall of 2018.

## **I. Objective One: Review the Adequacy of Montana's Brucellosis Rules to Prevent the Spread of Brucellosis beyond the DSA**

### **Findings and Observations**

#### *Brucellosis Program Leadership and Personnel*

The Montana Department of Livestock (MDOL) is in the executive branch of State government. It is headed by the Board of Livestock (BOL), a 7-member board appointed by the Governor with consent of the Senate. Each member must be a resident of the State and an active livestock producer. Members are appointed upon the recommendation of the related industry. Four members are cattle producers, one a dairy producer, one a swine producer and, one a sheep producer. The BOL hires an executive officer to act on its behalf when it is not in session.

The State Veterinarian (currently, Dr. Martin A. Zaluski) is hired by the BOL and is the administrator of the Animal Health and Food Safety Division. The brucellosis program (Program veterinarian: Dr. Eric Liska) is within the Animal Health Bureau (Bureau Chief: Dr. Tahnee Szymanski). The Animal Health Bureau is part of the Animal Health and Food Safety Division.

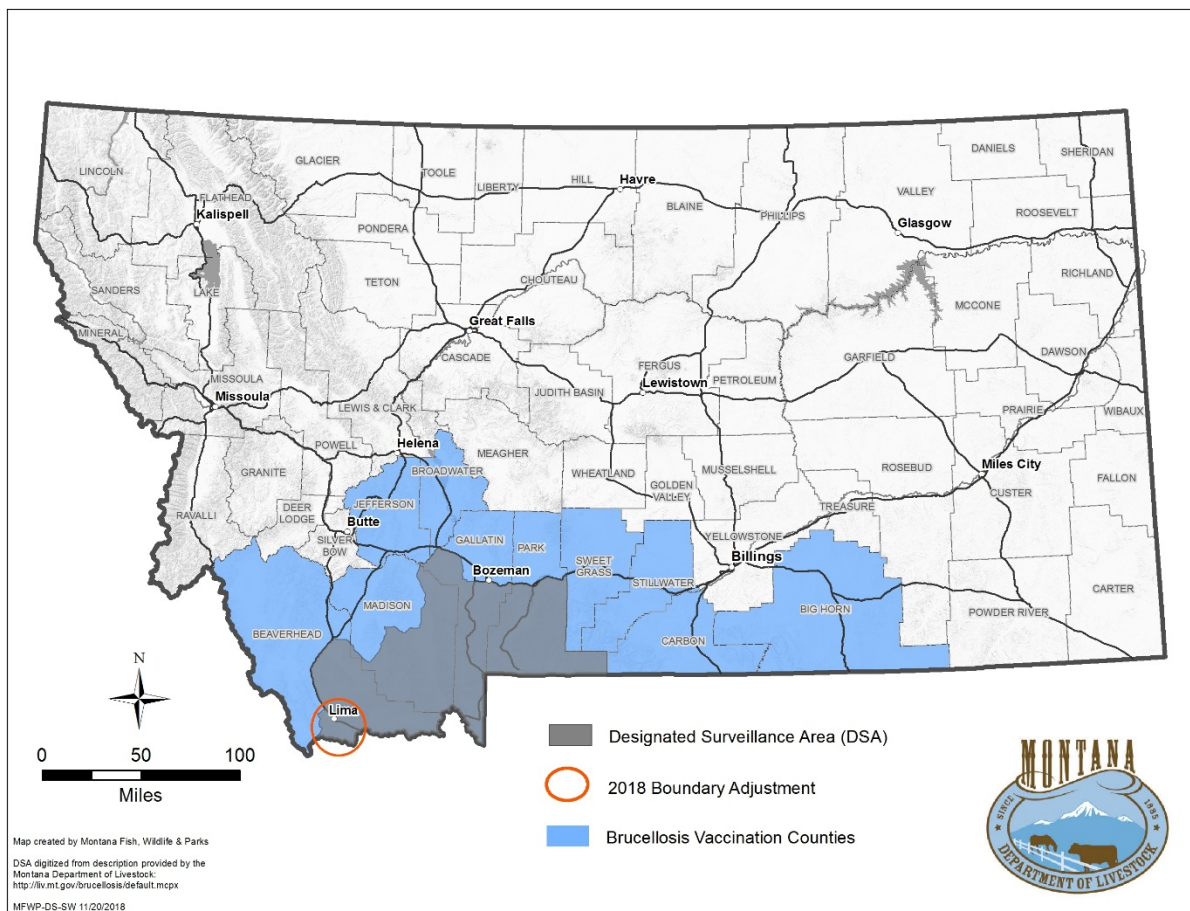
Brucellosis program regulations are written in Administrative Rules of Montana (ARM). New rules or changes to current rules must first be approved by the BOL. If approved, the ARM

change is opened for public comment. Per Montana Code Annotated (MCA) 81-1-102, MDOL maintains a list of interested parties who are notified of ARM changes when public comment is open.

#### *Overall Adequacy of Regulations*

MDOL ARM as well as Montana Code Annotated (MCA) is enforced by law enforcement personnel in the Brands Division (Division Head: Lesley Doely) of the MDOL. Based on this review, Montana brucellosis regulations (See Table 1) seem adequate to implement and enforce the state brucellosis program.

**Map 1: 2018 Montana DSA and Brucellosis Vaccination Counties**



**Table 1. Summary of Montana Brucellosis Regulations**

<b><u>Vaccination</u></b>	
<b>County-wide (10 counties)</b>	All sexually intact female cattle and bison 12 months-of-age or older in 10 Montana counties must be official brucellosis vaccinates. This includes the 4 counties in which the DSA is located ( <b>Beaverhead, Gallatin, Madison, and Park</b> ), the 5 counties that border on the DSA ( <b>Broadwater, Carbon, Jefferson, Stillwater, and Sweetgrass</b> ), and the County that borders on Wyoming's Brucellosis Area of Concern ( <b>Bighorn</b> ).
<b>DSA</b>	Official Vaccination required. Adult or calthood. Booster vaccination of replacement heifers is encouraged.
<b>Exemptions</b>	Less than 12 months-of-age but must be officially identified. This allows for feeder heifers to ship or be sold for feeding without a brucellosis vaccination.
<b><u>Live Animal Testing</u></b>	
<b>Test Eligible Definition</b>	All sexually intact animals 12 months-of-age and older or regardless of age if sold for breeding purposes (includes bulls).
<b>DSA</b>	Prior to change of ownership or movement out of the DSA
<b>Timeframe</b>	A test within 30 days prior to movement out of the DSA or change of ownership. A test completed July 16 or after is acceptable for movement out of the DSA or change of ownership through February 15 of the following year.
<b>Exemptions</b>	If movement is to an approved Montana livestock market where testing will occur. Variances or exceptions to requirements are considered on an individual basis by the administrator based on a brucellosis prevention and surveillance herd management agreement. Example: Seasonal grazer owned livestock that are in an area without handling facilities may return to home ranch for testing within 10 days.
<b>Movement Permit</b>	No special permit, just Brand Inspection certificate for change of ownership and movement out of the county.
<b>Brucellosis Ring Test (milk)</b>	All dairies State-wide tested quarterly. DSA dairies test 8 times per year.
<b><u>Slaughter Testing</u></b>	
<b>State-wide</b>	All test-eligible tested at in-State slaughter facilities.
<b>DSA</b>	Considered movement or change of ownership therefore, test eligible animals must meet DSA testing requirements prior to slaughter.
<b><u>Identification</u></b>	
<b>State-wide</b>	No State-wide requirement: <ul style="list-style-type: none"> <li>• Official brucellosis vaccinates must have official individual identification</li> <li>• Exports-must comply with Animal Disease Traceability (ADT) regulations</li> </ul>
<b>DSA</b>	All sexually intact animals regardless of age prior to movement out of the DSA.
<b>Exemptions</b>	Variances or exceptions to requirements are considered on an individual basis by the SAHO based on a brucellosis prevention and surveillance herd management agreement. Example: Variance to official identification prior to leaving the DSA: DSA seasonal grazer owned heifer calves that will be OCV/identified upon return to home ranch outside of the DSA.

### *Testing Requirements and Implementation*

- Montana producers and accredited veterinarians are very cooperative with DSA testing requirements. Most producers contact their herd vet when they want to move animals and the veterinarian usually contacts brand inspection and performs the proper testing prior to brand inspection arriving. However, brand inspectors cannot refuse writing brand inspection papers if ownership is proven, if testing has not been done and animal health or brands enforcement officers are notified. See Figure 2 below. Nonetheless, records show that overall compliance is excellent.

### **Recommendations**

1. Continue the State's financial reimbursement for testing and vaccination to veterinarians and producers. This portion of the program is essential to compliance. SAHO thinks that reimbursement rates may need to be updated soon based on current Vet costs.

## **II. Objective Two: Assess the Enforcement of Brucellosis-related Rules**

### **Identification, Livestock Markets, Dealers and Slaughter Plant(s) – Findings and Observations**

- At PAYS in Billings, when DSA cattle are checked in and DSA is written on check-in sheet, those cattle are placed in “dead alley” upon arrival for movement to vet chute.
- A list of DSA and non-DSA counties, including all 10 brucellosis regulated counties, is available in card form at check-in site as well as on the wall.
- Pregnant non-vaccinates presenting from the DSA are not vaccinated at markets due to fear of pregnancy loss, but are brucellosis tested. Owners should get a warning or a ticket from market/brand inspection for not being vaccinated from the DSA but this is rarely necessary (nine no vaccination tickets were written in FY2017, none in FY18 or 19).
- Cattle arriving presale are blood tested only. Cattle arriving the day of sale are Card tested on-site and blood from Card tested cattle is sent into the Montana lab for verification.
- Brand Inspection is sensitive to producer personalities and politics surrounding the DSA testing protocol. Brand Inspection knows those producers that may not self-declare, and rather than confront them, they will just be designated DSA and sent for testing.
- The Archer handheld devices which are linked with the state's brand inventory system flags those brands that have cattle or previously ran cattle in the DSA, so this is another check on cattle that are required to be tested.
- There may be a potential for seasonal grazers that don't self-declare and are unknown to brand inspection to fall through the cracks, but brand inspection is aware of this minimal risk potential.
- Brand inspection and vet staff stated the most likely reason for not self-declaring was producer concerns about weight loss and chute injury during testing.
- At risk cattle, i.e. crippled, too large to fit in chute, or aggressive, are blood tested at the discretion of the market. Veterinarians state this was approved by MDOL staff and these animals are designated as slaughter only.

- Card test is performed at all Montana markets. Non-negatives will stop further movement of the load until a laboratory test result comes back for clarification. Only 2-5 producers get stopped per year.
- Prioritize DSA tag orders to ensure adequate numbers of tags available for program implementation.
- One local vet asked if the DSA could continue to use metal brite tags in the future as official ID due to perceived better retention than RFID tags in range cattle. Review team promised that we would ask our leadership this question.
- Pioneer Meats Slaughter Plant, Big Timber, MT – Inspector expressed questions to us regarding the collection age of animals. At this state inspected plant, the inspector collects samples from all sexually intact animals over 12 months-of-age, per Montana State regulations. But in Columbus, MT at the federally inspected slaughter plant, she was directed by USDA to collect samples from animals over 24 months-of-age.

#### *Strengths*

- Cattle arriving at auction for inspection from the Montana DSA and associated counties are consistently identified.
- Livestock markets that receive DSA cattle seem to be enforcing all applicable brucellosis test and vaccination regulations.
- All test-eligible adult cattle and bison at Montana slaughter facilities, both federal and state inspected, are bled for brucellosis testing.

#### *Weaknesses*

- Cattle arriving from DSA's outside of Montana have the potential to go unidentified.
- State and Federal slaughter plants don't follow the same minimum test-eligible age.
- Vaccinations are two years behind from being entered into that state electronic database.

#### **Recommendations**

2. Develop a better system to monitor testing compliance associated with animal movements than the annual retrospective method currently employed. Try to achieve more real-time compliance by:
  - a. Funding electronic brand inspection forms/software for real time database downloads of work accomplished, or
  - b. Conducting compliance evaluations on a more frequent basis than annually, or
  - c. Add another FTE to enter brand inspection and vaccination data into your database.
3. APHIS and the MDOL should finalize and sign an MOU to include a BMP as soon as reasonably possible to come under full compliance with 9 CFR 78. APHIS and MDOL shall revisit this MOU annually.
4. USDA should prioritize DSA tag orders to ensure adequate numbers of tags available for program implementation.
5. Idaho and Wyoming DSA brands and/or producers should be loaded onto Archer electronic database system for hand-held devices used at markets to insure DSA cattle identification.

6. Request VS or state support for implementing the use of MIM for auctions testing and vaccinating.
7. Reconcile FSIS and Montana State slaughter collection regulations for both state and federal inspectors to minimize confusion.

### III. Objective 3: Assess Cattle Surveillance, Diagnostics/Laboratory Capability, and Producer Education in Place to Support the Program

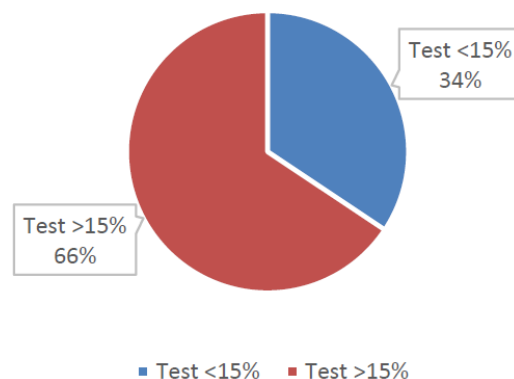
#### *Cattle Brucellosis Surveillance*

Throughout the year the Department of Livestock observes trends in cattle and domestic bison numbers and testing practices within the Designated Surveillance Area, and then identifies areas for improvement in the program. The Fiscal Year 2018 evaluation included 86,352 cattle and domestic bison in 358 herds. A total of 80,753 Designated Surveillance Area associated tests were conducted. Overall, compliance with Designated Surveillance Area testing requirements is high; 99% of the producers were in compliance with testing requirements for movement and sale.

Most producers test greater than 15% of animals in their herds in the DSA (235/358, 66%) (Figure 1) which accounts for 78% of the DSA program animals (67,419/86,352). Producers who test less than 15% of their total herd size encompass 34% (123/358). Interestingly, producers whose herds have testing percentages less than 15% were no more likely to have a field-testing violation than those whose herds were tested at a level over 15% (chi-squared test,  $p=0.42$ ).

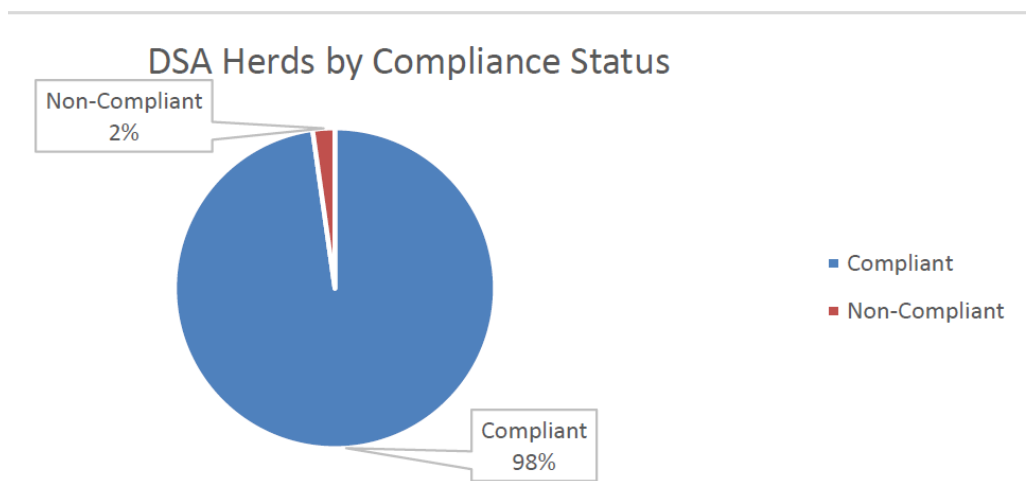
Producers that were non-compliant were those that had one or more documented movements or sales of a test-eligible animal without a corresponding brucellosis test. Only 2% (Figure 2.) of DSA producers (8/358) had a non-compliant animal movement or sale. Many of these producers had one or two non-compliant animal movements or sales among many with appropriate testing. Overall producer compliance was excellent with only 1 of the 8 producers having non-compliant movements or sales. These were considered low risk because they were sold and shipped directly to slaughter. The compliance assessment encompasses both market and field sales.

Testing Percentage for DSA Herds

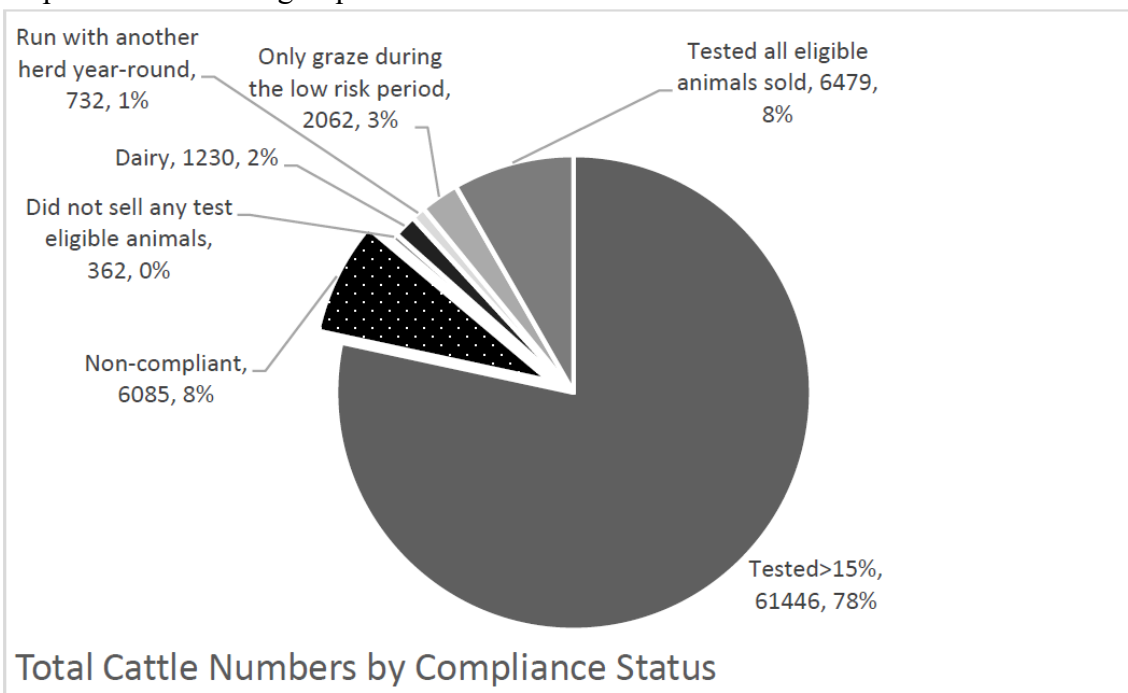


**Figure 1.** There are 358 producers known to have cattle in the DSA. 235 of those producers (66%) tested greater than 15% of their herd during FY18. 123 producers (34%) tested less than 15% of their herd.

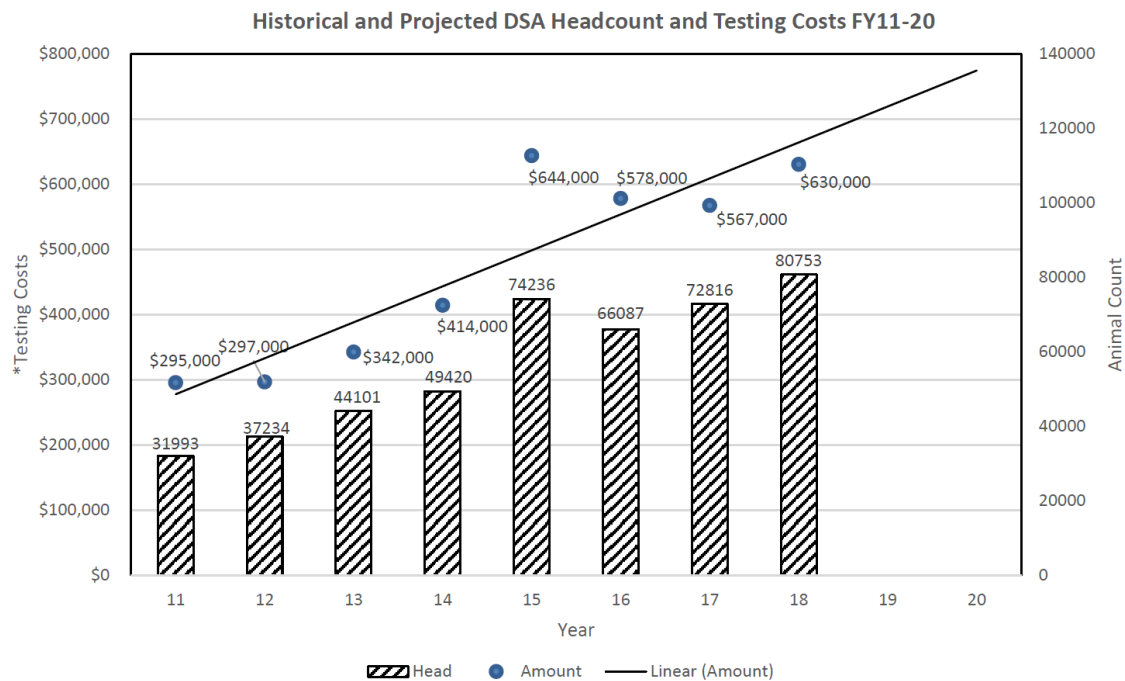
Montana spends about \$1.2 M annually from General State funds for the brucellosis program. Roughly \$600 K of that amount covers the reimbursements to producers and vets for testing.



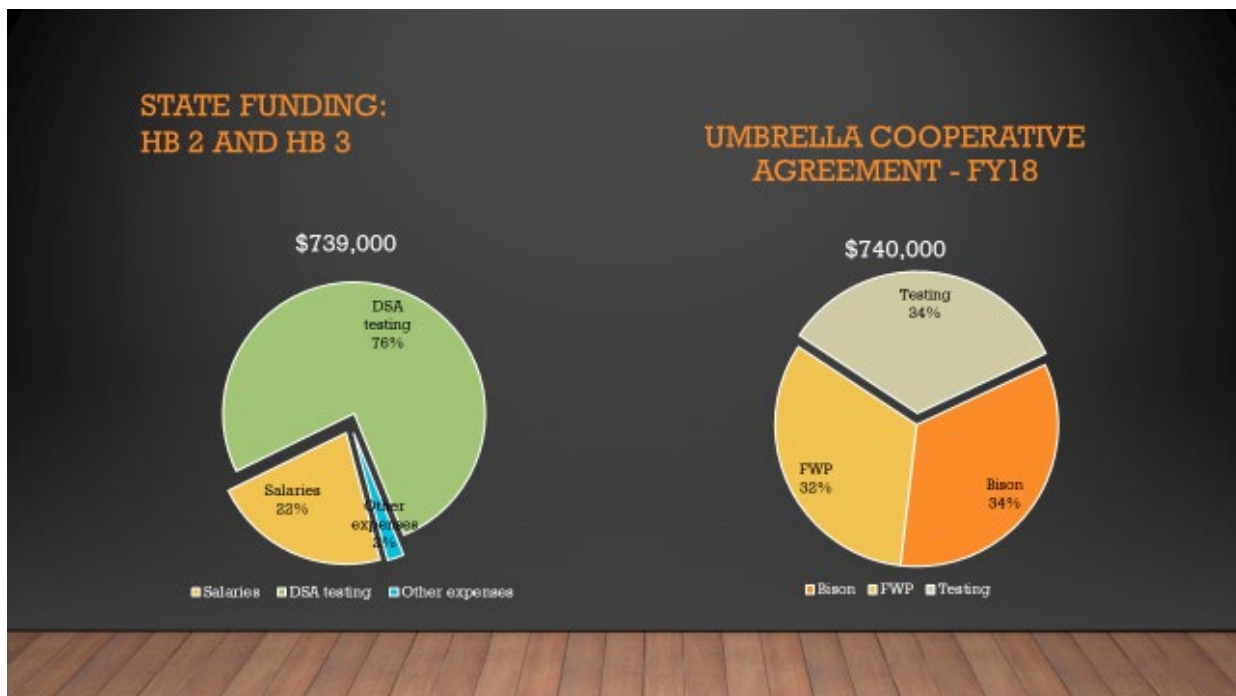
**Figure 2.** Of the 358 total producers in the DSA, 350 (98%) have brucellosis testing corresponding to all field movements or sales of DSA animals. Only 8 DSA producers (2%) have field inspections for movement or sale without a corresponding test and are, therefore, out of compliance with testing requirements.



**Figure 3.** Total cattle numbers by compliance status. Of the approximately 78,500 cattle in the DSA approximately 78% come from herds that are in compliance and tested at least 15% of the herd. Only 9% of cattle come from herds that are out of compliance with testing requirements.



**Figure 4.** Testing Costs are based on amount reimbursed to veterinarians and producers for tests performed on Designated Surveillance Area (DSA) livestock in FY11-18. Projected Head Count and Testing Costs are estimated based on a linear (amount) line from known data. Costs have increased over time due to the increasing size of the DSA. Additionally, each year more producers are voluntarily conducting herd testing as a good management practice.



**Figure 5.** State / Federal Breakout of Brucellosis Program Funding

### *Laboratory/Diagnostics*

- The Montana Veterinary Diagnostic Lab capability, performance and responsiveness to producers seems to be a real strength of the program. Producers and veterinarians had high praise for Serology Technician, Antonio Fuentes Sanchez's customer service.
- All brucellosis serologic samples go through the Montana lab before any non-negatives go to the National Veterinary Services Laboratories (NVSL) for confirmation. The lab is up to date on all proficiency testing and is approved to run the Card, RAP, BAPA, SPT, and FPA tests on blood, as well as HIRT and BRT on milk.
- Montana had a FPA responder rate of 185 FPA non-negatives per 100,000 animals tested compared to a rate of 900 non-negatives per 100,000 samples in Idaho and ~10 FPA non-negatives per 100,000 slaughter samples outside of the GYA under the national slaughter surveillance program.

### *Producer Education*

- MDOL, the State Veterinarian, Brand Inspectors, and Livestock Investigators work together to speak to and educate producers on the Montana Brucellosis Program every year. MDOL employees speak at producer meetings, industry meetings, and production sales to provide their message to the public.
- The Brand Inspectors and Livestock Investigators said that DSA producers are well educated on the brucellosis program and a healthy amount of peer pressure exists for producers to vaccinate and test their herds.

### **Recommendations**

8. Continue the current level of cattle surveillance, compliance monitoring, laboratory efficiency and customer service, and producer education for the brucellosis program.

## **IV. Objective 4: Wildlife Surveillance and Mitigation**

### *Wildlife Surveillance*

- Brucellosis surveillance in Montana wildlife is conducted by Montana Department of Fish, Wildlife and Parks (MFWP), in cooperation with MDOL and USDA. Areas targeted for annual elk sampling are decided by MT FWP expert panel meetings with input from MT DOL. A sample area decision matrix was discussed at the 2018 USAHA-Western States meeting, and the Brucellosis subcommittee.
- Hunter sampling has been eliminated from MT's surveillance strategy over the years due to the cost of blood sampling supplies, past experience with marginal value of the information collected, and the complex logistical procedures required to get testable samples to the laboratory.
- Therefore, with the exception of those areas and individuals selected annually by MFWP for *B. abortus* surveillance and GPS collaring, monitoring within the core of DSA is not a priority. The boundaries and interface are of chief concern.
- In brief, *B. abortus* surveillance in elk in MT entails capturing and sampling approximately 100 elk per year, in areas adjacent to the MT DSA. Roughly 45 head of

the 100 captured are GPS collared, and the movements of those animals recorded throughout the year. This allows the elk migration patterns to be studied over time, and helps identify spatial-temporal and seasonal variations in elk herd movements, as well as distribution and concentration upon the land. USDA funds the targeted elk surveillance through USDA-MT cooperative agreement funds.

### *Strengths*

- It is believed that these movement studies being coupled directly to the elk Brucellosis sampling, provides higher quality data than hunter kill samples and may help to identify new areas of *B. abortus* exposure risk for cattle herds interfacing with infected elk in the boundary areas of the DSA.
- There are no private or government sponsored winter feeding grounds in Montana.
- MFWP and MDOL enter into an MOU each year proposing new or ongoing actions resulting from past and current fiscal year federal cooperative agreement awards contracted to MT FWP to accomplish wildlife surveillance, risk assessment/mitigation and epidemiology activities.
- Locations currently targeted for sampling are decided by subject matter experts (SMEs) with knowledge of known areas of elk and cattle intermingling and overlapping of habitat and calving seasons, which help determine areas of targeted surveillance.
- MT Livestock Board has repeatedly voted to expand the DSA boundary in MT, based on this targeted surveillance sampling. Most expansion to the DSA over the years has been to the west and north in MT.

### *Weaknesses*

- Early detection in elk herds outside the DSA is limited to the adjacent area sampling methodology described. If disease moves into an untargeted area or beyond the adjacent boundaries into an un-sampled area where SMEs do not expect, there is an unmeasured risk that *B. abortus* could go undetected for a period of time. With the current tools and methods, Montana decided it was not cost-effective to monitor changes in *B. abortus* prevalence in elk that occur in response to various management strategies. Rather, they prioritized resources to implement the strategies to control the disease.
- Elk Brucellosis prevalence estimates are limited and accurate for areas where recent testing has occurred within herds. Elk testing has been limited only to targeted areas since 2009. This surveillance strategy is augmented by 20 years of cumulative hunter sample data. There are no current plans to add this surveillance stream back into the data frame. In the reviewers' experience, it is always good to have the hunting industry as an ally in any eradication and/or control strategy involving wildlife.

### *Wildlife Mitigation Activities*

- MFWP personnel continue to evaluate the effects of wildlife risk management actions such as management hunts, hazing, and fencing.
- With respect to cattle ranches within the DSA, many also profit from promoting their ranch operations as privately managed big game hunt clubs. Some cattle ranches have been infected and gone through the costly test-and-remove process, only to become re-infected.

- Wildlife exclusion methods such as wildlife fencing do not appear to be of high priority. The vast ranges and habitat cost involved may be prohibitive.

### Recommendations

9. MFWP continue to maintain and broaden their current excellent relationship with MDOL, and continue using USDA cooperative agreement funds to sample and capture ~100 elk per year on the outer edges of the DSA in order to evaluate the DSA borders.
10. Explore and consider alternate surveillance sampling strategies to include hunter kill samples inside and outside the DSA at some level of sampling.

## V. Objective 5: Evaluate DSA Boundaries, Testing, and Movement Restrictions for Overall Effectiveness

**Montana's DSA was established February 11, 2011:** The initial DSA boundary was based on the known range of seropositive elk through consultation with Montana Fish, Wildlife and Parks. Subsequent DSA boundary changes have all been based on capture of seropositive elk outside of the current DSA.

Overall effectiveness of DSA surveillance testing, movement restrictions and DSA boundaries seems to excellent. Overall, *B. abortus* surveillance testing within the DSA per year in Montana allows for a high confidence of detecting infection before moving out of the DSA. Education and cooperation of local producers and veterinarians along with brand inspection seems to be very good and functioning well.

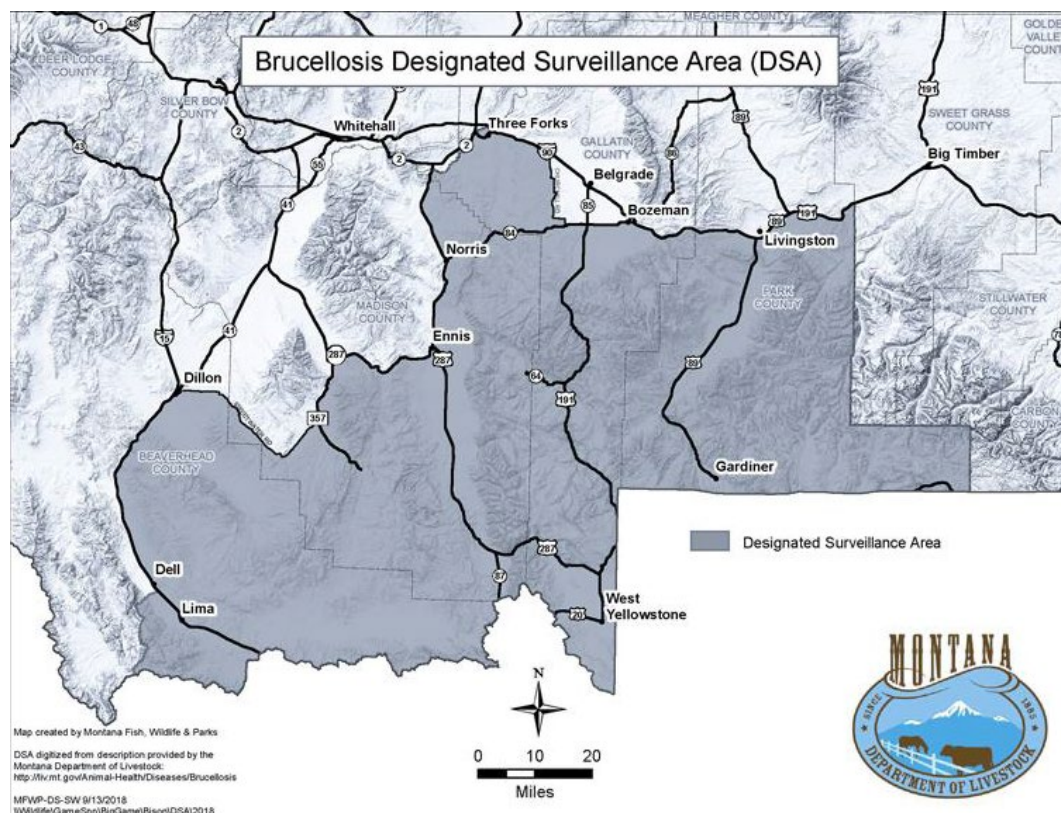
**Table 2:** Montana DSA cattle herds (as of May, 2019)

Description	# of Herds/Animals
DSA cattle herds (includes seasonal use)	370
DSA cattle and bison head (includes seasonal use)	87,592
DSA bison herds (includes 1 seasonal)	3
DSA bison head	4,412

The Fiscal Year 2018 DSA evaluation identified 86,352 cattle and domestic bison in 358 herds. A total of 80,753 Designated Surveillance Area associated tests were conducted in Fiscal Year 2018. Overall, compliance with Designated Surveillance Area testing requirements is high; 98% of the producers were in compliance with testing requirements for movement and sale.

$80,753 \text{ head tested} \div 86,352 \text{ total DSA cattle/bison} = 93.5\% \text{ DSA head tested}$

## Map 2: 2019 Montana Brucellosis DSA



## Recommendations

11. Continue to encourage herds to “whole herd test in the fall” to motivate DSA herds to take control of their own annual surveillance testing, and also get more DSA animals tested than with just pre-movement testing.
12. Continue to collaborate with other GYA states to keep programs similar and transparent.

## Conclusion

APHIS appreciates the hospitality and cooperation from MDOL staff and VS Montana to conduct this review. Access to all of the data, records, personnel, producers, veterinarians, markets, and slaughter plants made our job much easier, for which we say a hardy “Thank you!”

# 2019 USDA Review of Montana's Brucellosis Management Program

## Montana Response

### Review Objectives:

- Review the adequacy of the State's brucellosis rules and infrastructure to prevent the spread of brucellosis beyond the DSA.
- Assess the enforcement of brucellosis rules.
- Assess cattle surveillance, diagnostics/laboratory capability, and producer education and cooperation.
- Assess wildlife surveillance and risk mitigation activities.
- Evaluate DSA boundaries, testing, and movement restrictions for overall effectiveness.

### USDA review team key recommendations and MDOL responses:

1. *Continue the State's financial reimbursement for testing and vaccination to veterinarians and producers. Reimbursement rates may need updating.*

**Response:** Thank you for these recommendations. We agree that the testing reimbursement to veterinarians and producers is important to maintain the high compliance rate that Montana has seen over the years. As stated by the review team, "Future program success will most likely depend on continued State/Federal financial support". With the support of USDA and the Montana Legislature, Montana has been able to maintain reimbursement amounts at the same level since the inception of the Designated Surveillance Area.

The review document notes that, "The loss of RAP antigen production at NVSL will require federal support for any changes associated with the loss of the RAP antigen in the standard brucellosis testing protocol." The Montana Veterinary Diagnostic Laboratory (MVDL) has transitioned to the FPA for screening samples. Unfortunately, the cost of materials per test for the FPA is more expensive (\$0.82 per test) than the RAP test which USDA historically subsidized by supplying expendable products needed to run the test. For that reason, MDOL is requesting ongoing funding to offset the additional cost of the FPA test.

We appreciate the USDA recommendation to update and reflect rising costs to veterinarians over the years. MDOL has recently changed the policy outlining reimbursement amounts and procedures. This change resulted in a small increase in the net reimbursement amount for veterinarians.

2. *Develop a better system to monitor testing compliance associated with animal movements than the annual retrospective method. Try to achieve more real-time compliance by:*
  - a. *Funding electronic brand inspection forms/software for real-time database downloads of work accomplished, or*
  - b. *Conducting compliance evaluations on a more frequent basis than annually, or*
  - c. *Add another FTE to enter brand inspection and vaccination data into the database.*

**Response:** As mentioned in the review, overall producer compliance [with DSA regulations] is excellent. Regardless, MDOL continues to work towards compliance monitoring as frequently as possible. The brucellosis program compliance technician does confirm on a weekly basis (and sometimes more often) that all test eligible DSA cattle are tested at markets. For cattle sold or moved outside of market channels, confirmation of compliance does not occur as often due to the delay associated with receipt of paper brand inspections. The Brands Enforcement Division has prioritized data input of field inspections from DSA counties in order to assess compliance quickly.

The annual compliance assessment is the cumulative report of these frequent assessments which we intend to be finalized shortly after the end of each fiscal year.

In the review, USDA stated that Montana may need immediate financial support for a full-time employee to enter vaccination records. Historically, the Montana USDA office entered vaccination certificate data. Recently, MDOL took over entry of vaccination records. Montana will include a request for financial support for data entry personnel in the next cooperative agreement cycle.

3. *APHIS and MDOL should finalize and sign a Memorandum of Understanding (MOU) to include a brucellosis management plan (BMP) as soon as possible to come under full compliance with title 9, Code of Federal Regulations (9 CFR), part 78. APHIS has not pushed for a signature until completing this review.*

**Response:** Montana submitted the MOU to USDA for review and signing in February of 2019. MDOL recently received the USDA version following their review. MDOL and MTFWP have signed the document and it has been submitted to USDA.

4. *USDA should prioritize Montana DSA tag orders to ensure adequate numbers of tags available for program implementation.*

**Response:** EID tags have been used for many years for epidemiologic investigations. Tags have historically been supplied by USDA for these investigations at no charge. Electronic Identification (EID) tags are also utilized by many DSA producers and have simplified and even incentivized herd testing.

An important aspect of the brucellosis program in Montana is the requirement that all sexually intact animals regardless of age must be officially individually identified prior to leaving the DSA. MDOL would appreciate any financial or technology support that USDA could provide to help producers comply with this traceability requirement.

5. *Idaho and Wyoming DSA brands and/or producers should be loaded onto Archer electronic database system for hand-held devices used at markets to ensure DSA cattle identification.*

**Response:** The three GYA states will investigate to determine if sharing of DSA producer information could occur under current Montana, Wyoming and Idaho law. That said, each state

has regulations that ensure DSA cattle are identified and tested. Wyoming requires that all cattle from their DSA or Brucellosis Area of Concern (BAC) obtain a brand inspection prior to leaving the State. Wyoming DSA and BAC cattle brand certificates are marked as such and are, therefore, recognized and tested at Montana markets upon arrival. If cattle arrive without a brand inspection, then Montana has directed our markets to treat them as DSA cattle. Per Montana rule, movement of untested Montana DSA cattle to an out of state market is not allowed. Montana DSA cattle must be tested prior to leaving the DSA unless they are moving to an approved Montana market where they will be tested. Idaho's requirements are similar to Montana's. Idaho DSA cattle must be tested prior to leaving the State or they can be moved directly to slaughter or an Idaho market where testing will occur. Idaho also requires a brand inspection on all cattle leaving the State.

In addition to State regulations, differences in database technology between the States and the need to constantly update information due to changes in DSA producer information, complicates sharing of DSA producer data.

6. *Request VS or State support for implementing the use of Mobile Information Management (MIM) for auction-market testing and vaccinating.*

**Response:** VS and MDOL support the use of MIM software at auction markets for testing. However, other software is currently in use at some Montana markets. MDOL does not prioritize or recommend a single software but rather allows the veterinarian at each market to determine which software to utilize, as long as it meets minimum standards. MDOL does encourage market veterinarians to utilize software that can create electronic test charts. MIM software would be more likely to be adopted if updated by USDA to allow for easier manipulation of data collected in the field. MIMS limitations with newer versions of Windows software also reduces adoption.

Montana does not recommend adult vaccination at markets due to the 21 day slaughter withdrawal period, and possible abortion of pregnant cattle with subsequent financial and public health concerns. Additionally, we discourage vaccination of young females at the market because the stress level of heifer calves at the market with an RB51 vaccination can be detrimental to the health of the animal. Rather, animals are required to be vaccinated prior to arrival at the market. Electronic vaccination certificates are encouraged and made available to all Montana veterinarians.

7. *Reconcile FSIS and Montana State slaughter collection regulations for both State and Federal inspectors to minimize confusion.*

**Response:** We agree with the assessment that USDA-FSIS should collect samples on sexually intact animals 12 months of age and older as Montana facilities do. However, the State of Montana does not have authority over USDA-FSIS or its employees. Montana welcomes the opportunity to support USDA-VS in making a request to lower the age for brucellosis testing at federally inspected facilities in our State.

8. *Continue the current level of cattle surveillance, compliance monitoring, laboratory efficiency, customer service, and producer education for the brucellosis program.*

**Response:** Thank you, MDOL agrees with this recommendation and strives to maintain a vigorous and efficient brucellosis program.

9. *MFWP should continue to maintain and broaden its excellent relationship with MDOL and continue using USDA cooperative agreement funds to sample and capture 150 elk per year on the outer edges of the DSA to evaluate the DSA borders.*

**Response:** Thank you, MDOL plans to continue the live elk capture sampling program with the continued financial support of USDA through the annual cooperative agreement. However, it is important to note that MFWP with funding in part from the MDOL USDA-APHIS cooperative agreement, historically captured and tested 100 elk each year. In 2018, 150 elk were captured. Fifty of those animals were part of a MFWP project to monitor the movements of a herd of elk within the DSA. With the end of the 5-year elk capture study last year, costs have decreased which has allowed for an increased capture number. In 2020 MFWP will capture a total of 150 elk with plans to capture the same number in 2021.

10. *Continue to encourage herds to “whole herd test in the fall” to motivate DSA herds to take control of their own annual surveillance testing and have more DSA animals tested than with just pre-movement testing.*

**Response:** Thank you. MDOL agrees. Annual herd testing helps protect producers by:

- Minimizing the spread of disease within a herd through early discovery;
- Minimizing the impact of epidemiologic investigations; and
- Potentially allowing producers to avoid quarantines during the grazing season, by finding the presence of the disease early.

Additionally, the opportune time for collecting samples for a whole herd is in the fall when animals are already being handled for pregnancy checking and may prevent required handling for testing at inconvenient times of the year.

Unfortunately, the move to FPA for screening following the loss of the RAP test resulted in multiple false positives which negatively impacted numerous Montana’s DSA producers. Initially, a lack of an interpretation and testing protocol caused a disruption in business for producers. This may reduce voluntary participation in the future.

11. *Continue to collaborate with other GYA States to keep programs similar and transparent.*

**Response:** Montana has maintained a healthy relationship with our GYA partners and will continue to collaborate with them to maintain similar programs. No one program is perfect and therefore, if another GYA state’s approach proves to be more effective, Montana is willing to modify our program to incorporate changes reflecting Wyoming or Idaho’s programs.

MDOL sincerely thanks USDA for a thorough review of Montana’s Brucellosis Management Program.